



TNF-alpha Luciferase Reporter- HEK293 Cell Line

Catalog number: RC1005

This package insert must be read in its entirety before using this product.
For research use only. Not for use in diagnostic procedures.

TNF-alpha Luciferase Reporter-HEK293 Cell Line

Catalog Number: RC1005, **Storage:** Immediately upon receipt, store in liquid nitrogen. (Ship on dry ice.)

Contents: Each vial contains $2 \sim 3 \times 10^6$ cells in 1 ml of 90% FBS + 10% DMSO.

Description: The TNF-alpha Luciferase Reporter cell line is a stably transfected HEK 293 cell line which expresses Renilla luciferase reporter gene under the transcriptional control of the TNF-alpha promoter. Tumor necrosis factor-alpha (TNF-alpha) is one of the major proinflammatory cytokines and can induce systemic inflammation, apoptotic cell death, sepsis and cachexia. Dysregulation of TNF-alpha induction is often involved in various human diseases including inflammatory bowel disease, cancer and Alzheimer's disease. The TNF-alpha induction by phorbol 12-myristate 13-acetate (PMA) is shown in Figure 1.

Applications: Functional Assay

Application Notes: Functional Assay, detecting the transcriptional activity of TNF-alpha

Application Details:

Application:

Monitor the TNF-alpha induction activity. Screen for activators or inhibitors of the TNF-alpha signaling pathway.

Culture conditions:

Cells should be grown at 37°C with 5% CO₂ using DMEM medium supplemented with 10% FBS and 1% Pen/Strep, plus 3 µg/ml of Puromycin. It is recommended to quickly thaw the frozen cells upon receipt or from liquid nitrogen in a 37°C water-bath, transfer to a tube containing 10 ml of growth medium without Puromycin, spin down cells, resuspend cells in pre-warmed growth medium without Puromycin, transfer resuspended cells to T25 flask and culture in 37°C-CO₂ incubator. Leave the T25 flask in the incubator for 2~4 days without disturbing or changing the medium until cells completely recover viability and become adherent. Once cells are over 90% adherent, remove growth medium and passage the cells through trypsinization and centrifugation. At first passage, switch to growth medium containing Puromycin. Cells should be split before they reach complete confluence. To passage the cells, detach cells from culture vessel with Trypsin/EDTA, add complete growth medium and transfer to a tube, spin down cells, resuspend cells and seed appropriate aliquots of cells suspension into new culture vessels. Subcultivation ration = 1:10 to 1:20 weekly.

Functional validation:

A. Response of TNF-alpha HEK293 cells to phorbol 12-myristate 13-acetate. 1. Harvest TNF-alpha HEK293 cells and seed cells into a white solid-bottom 96-well microplate in 100 µl of growth medium at 5×10^4 cells/well. 2. Incubate cells at 37°C in a CO₂ incubator for overnight. 3. The next day, stimulate cells with different concentrations of phorbol 12-myristate 13-acetate (PMA). 4. Incubate at 37°C in a CO₂ incubator for 6-16 hours. 5. Add 50 µl of luciferase assay reagent per well. 6. Incubate at room temperature for 1-5 minutes and measure luminescence using a microplate luminometer.

TNF-alpha Luciferase Reporter-HEK293 Cell Line (RC1005) Images

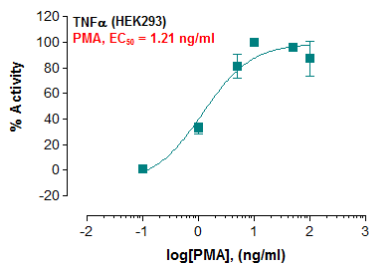


Fig-1: Induction of TNF-alpha promoter activity by phorbol 12-myristate 13-acetate in TNF-alpha HEK293 cells.

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